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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,390	03/01/2004	Ansgar Bergmann	034691/273220	2686

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EXAMINER

PHUNKULH, BOB A

ART UNIT	PAPER NUMBER
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2619

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/790,390	Applicant(s) BERGMANN ET AL.	
	Examiner BOB A. PHUNKULH	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-18, 20-22, 26, 27, 30-33 and 36-40 is/are rejected.
- 7) ☒ Claim(s) 11, 19, 28, 29, 34, 35 and 41-43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/01/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-16, 18, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 15-16 and 24, it is not clear what the value K is referring to.

Regarding claim 18, it is not clear what it meant by "so that a device is an mth neighbor of a device in the path ($m \leq 1$) knows at least one neighbor of the (m-1)th order of the device in the path" as cited in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10, 12-18, 20-22, 26-27, 30-33, 36-40 are rejected under 35 U.S.C. 102(e) as being anticipated by CAO et al. (US 6,721,269), hereinafter CAO.

Regarding claim 1, CAO discloses a method for maintaining and/or qualitatively improving a communication path in a relay system, wherein information is transmissible between two devices (A_0 , A_n) via one or more additional devices (A_1 , . . . , A_{n-1}) along the thereby formed communication path, and wherein at least one leg of the communication path is replaceable with a substitute path as a function of at least one predeterminable parameter, or usable at least at times simultaneously with a substitute path (the paths between LSRS to LSRE comprises of a plurality of intermediate nodes and at least one primary path and secondary path (see figure 1), and the data travels along the primary path and the secondary path simultaneously, see col.10 lines 9-16).

Regarding claim 2, CAO discloses a connection identifier is assigned to the connection that is defined or produced between the two devices ($A_{\text{sub}.0}$, $A_{\text{sub}.n}$) (connection ID ERLSP ID 502, see figure 4 and col. 9 lines 48-50).

Regarding claim 3, CAO discloses the connection identifier comprises an unambiguous identity of A_0 in the relay system at a predeterminable time and a provisional temporary identifier which is selected by A_0 (FECID 506, see figure 4).

Regarding claim 4, CAO discloses each change of a path is communicated to A_0 and/or A_n by the relays and/or end devices that participate in the path change (see col. 10 lines 14-24).

Regarding claim 5, CAO discloses a path identifier is assigned to the path, which is unambiguous at a given time, and takes account of each change in the path (IRLSP ID 502, see figure 4 and col. 9 lines 48-50).

Regarding claim 6, CAO discloses a device identifier for each information exchange via the path is assigned to at least one device A_i ($i=0, \dots, n$) that participates in the path (each of the nodes label is pre-assigned, see figure 5).

Regarding claim 7, CAO discloses wherein the device identifier comprises the path identifier and the position i in the path (ERLSP ID 502 and NEXT HOP 510, see figure 4).

Regarding claim 8, CAO discloses the connection identifier and/or the temporary identifier and/or the path identifier and/or the device identifier is or are assigned by A_0 and/or A_n (the ERLSP ID and FECID 506, see figure 4).

Regarding claim 9, CAO discloses each device exchanges with its adjacent relay information, preferably the identifiers of existing connections and/or paths and/or the position i in the path of neighbors of a predeterminable order (the label Distribution Protocol (LDP) exchanges information between nodes, see col. 6 lines 17-23).

Regarding claim 10, CAO inherently the exchange of information occurs periodically (exchanges information periodically using the LDP protocol is inherent feature).

Regarding claim 12, CAO inherently discloses each device participating in the path transmits via the path at least one of its identities to all other devices of the path or to the nearest K devices in both directions of the path (inherent feature for LDP protocol, see col. 6 lines 17-23).

Regarding claim 13, CAO discloses each device transmits the same identity to its neighbors of the first or a predeterminable higher order (inherent feature for LDP protocol, see col. 6 lines 17-23).

Regarding claim 14, CAO discloses wherein the identity is device-specific and/or subscriber-specific (IP destination address, see figure 2).

Regarding claim 15, CAO discloses wherein the value K is predeterminable (see figure 1).

Regarding claim 16, CAO discloses the value K is at least temporarily reducible, when a signaling load exceeds a predeterminable value (see figure 1).

Regarding claim 17, CAO discloses a relay participating in a path transmits the path identifier P and the position i in the path to its adjacent relays of the first order (inherent feature for LDP protocol, see col. 6 lines 17-23).

Regarding claim 18, CAO inherently discloses wherein in the relay system information is communicated via a device in the path to as far as lth neighbors of devices of the path, so that a device that is an mth neighbor of a device in the path ($m \geq l$) knows at least one neighbor of the (m-1)th order of the device in the path (inherent feature for LDP protocol, see col. 6 lines 17-23).

Regarding claim 20, CAO inherently discloses devices or relays exchange adjacency information with their adjacent relays of the first order via their adjacent relays of the lth order (inherent feature for LDP protocol, see col. 6 lines 17-23).

Regarding claim 21, CAO discloses the adjacency information comprises the identity and the order of the adjacency (inherent feature for LDP protocol, see col. 6 lines 17-23).

Regarding claim 22, CAO inherently discloses each device participating in the path transmits via the path the adjacency information to all other devices of the path or to the nearest K devices in both directions of the path (inherent feature for LDP protocol,

see col. 6 lines 17-23).

Regarding claim 26, CAO discloses for examining whether a link between two devices or relays is disturbed or interrupted or is assumed to be disturbed or interrupted, a link diagnosis and/or link signaling is performed (see col. 10 lines 1-41).

Regarding claim 27, CAO discloses the quality and/or the quality of service of the path or leg thereof is rated (see col. 10 lines 17-25).

Regarding claim 30, CAO discloses a local substitution is initiated by requesting the substitution candidate to further establish the new leg of the path (the LSR that detects the fault initiates an upstream status signal and downstream status signal, see col. 10 lines 14-41).

Regarding claim 31, CAO discloses the request is forwarded by the substitution candidate to further suitable relays (the LSR that detects the fault initiates an upstream status signal and downstream status signal, see col. 10 lines 14-41).

Regarding claim 32, CAO discloses wherein a device A_i ($i=0$ or n) performs a global substitution, when the quality of the path from A_i to A_j ($j=0$ or $j=n$; $j \neq i$) or A_{i-1} ($i>0$) falls below a predeterminable quality (see col. 2 lines 18-24).

Regarding claim 33, CAO discloses the substitution candidate performs a global substitution by establishing a path between A_i and A_n according to a nondeterministic method of establishing a path and/or a method that takes into account the network status or the status of the relay system, so that in all likelihood the substitution path differs from the original path (see col. 2 lines 25-47).

Regarding claim 36, CAO discloses in the case of the global substitution, a service connection uses both or several paths, the original and the new path or the new paths, until the original path or one of the new paths exceeds a quality threshold value (see col. 2 lines 48-67).

Regarding claim 37, CAO discloses The method of claim 36, wherein after exceeding the quality threshold value, less suited paths are disconnected (see col. 2 lines 48-67 and col. 10 lines 14-21).

Regarding claim 38, CAO inherently disclose the user information that is to be transmitted can be buffered at the respective destination (inherent feature for router along the path).

Regarding claim 39, CAO discloses it is determined during the establishment of a path or during a communication connection, which relay or relays is or are authorized

to perform a substitution (see col.2 lines 38-47).

Regarding claim 40, CAO discloses the device or relay nearest to a source or a destination is authorized to perform a substitution (see col. 2 lines 38-47).

Allowable Subject Matter

Claims 11, 19, 28-29, 34-35, 41-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any response to this action should be mailed to:

The following address mail to be delivered by the United States Postal Service (USPS) only:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(571) 273-8300, (for formal communications intended for entry)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(571) 272-3083**. The examiner can normally be reached on Monday-Tuesday from 8:00 A.M.

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to 5:00 P.M. (first week of the bi-week) and Monday-Friday (for second week of the bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor **Jay Patel**, can be reach on **(571) 272-2988**. The fax phone number for this group is **(571) 273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Bob A. Phunkulh/
Primary Examiner, Art Unit 2619